5.2 AESTHETICS/LIGHT AND GLARE

EXISTING CONDITIONS

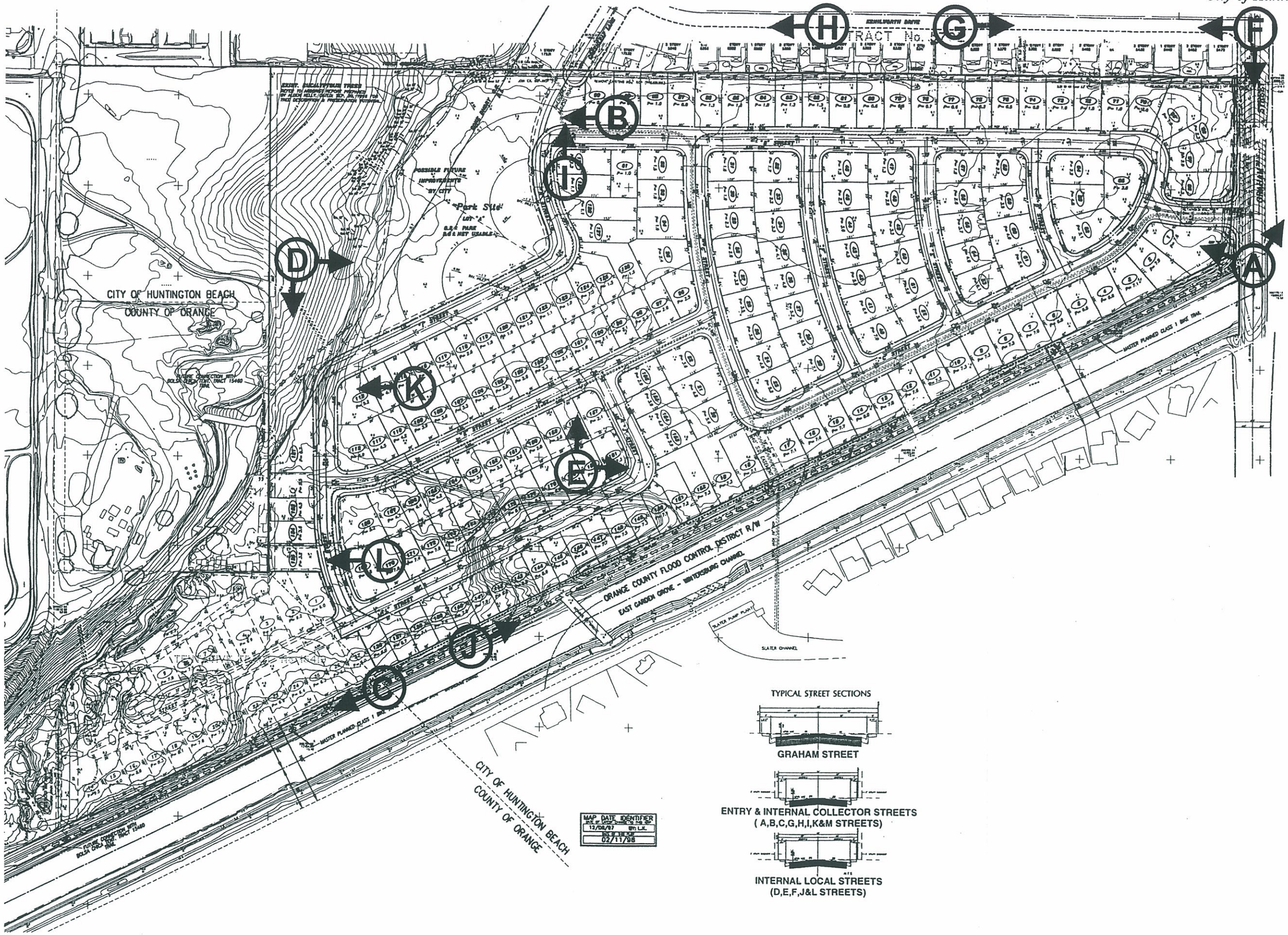
Aesthetics (View Analysis)

The visual character of the project site is primarily disced vacant land. The site is flat with the exception of a rolling hill within the northwestern corner of the site that extends in a southwesterly direction. The predominant vegetation on the site includes two (2) eucalyptus groves in the northwestern portion of the site. Surrounding land uses consist of Low-Density and Medium-High Density Residential uses, the East Garden Grove - Wintersburg Channel, and open space. The northern border of the site is bounded primarily by existing single-family residential development. The northwestern border of the site is bounded by existing multi-family residential development (Cabo del Mar condominiums). The eastern border of the site is bounded by Graham Street, while the southern boundary is bounded by the East Garden Grove - Wintersburg Channel, which carries stormdrain runoff to the Pacific Ocean. The western off-site border of the project site is bounded primarily by open space with the exception of a small horse boarding area, which includes a stable and an existing storage area associated with the stable.

Site-Photos

A view analysis was prepared for the project. Photographs have been taken of the project site and surrounding off-site areas. Exhibit 20 Site Photo Index shows the location from which each photograph was taken. Existing on-site conditions are depicted in Exhibits 21 and 22. Existing off-site conditions are depicted in Exhibit 23 and 24.

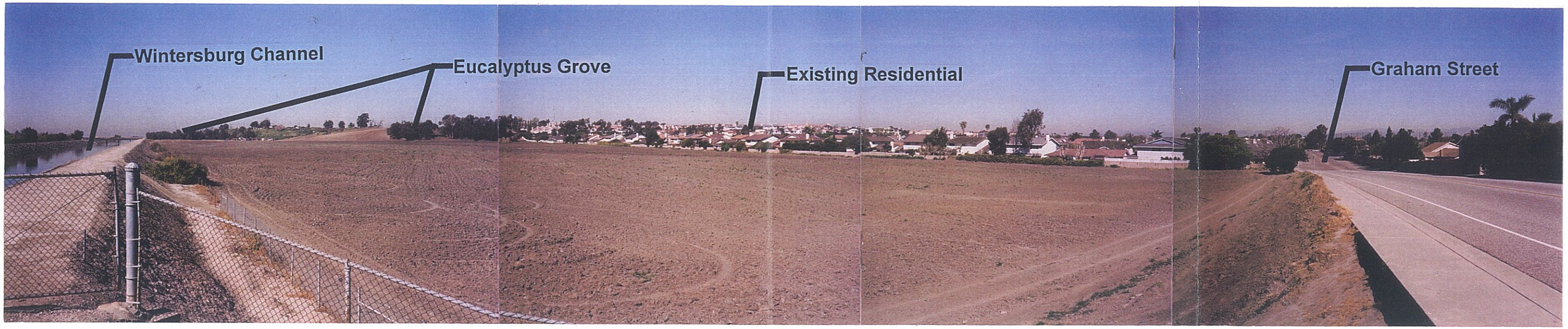
Exhibit 21, Site Photograph A, is a view from the southeastern corner of the project site adjacent to Graham Street, looking northwest across the site towards the existing off-site residential areas located directly north of the project site. This photograph shows Graham Street in the right corner and the East Garden Grove - Wintersburg Channel that extends to the Pacific Ocean in the left corner. Exhibit 21, Site Photograph B, is a view from the northern property edge near Greenleaf Lane, looking west over the project site towards the northerly most existing on-site eucalyptus grove and beyond. Existing off-site multi-family residential uses (Cabo del Mar condominiums) can be seen in the right background of the photo. Exhibit 21, Site Photograph C, is a view from the edge of East Garden Grove - Wintersburg Channel towards the most westerly portion of the site. This view shows the existing unrecorded 10-foot above-ground gas line located on-site and a portion of the southerly most eucalyptus grove.



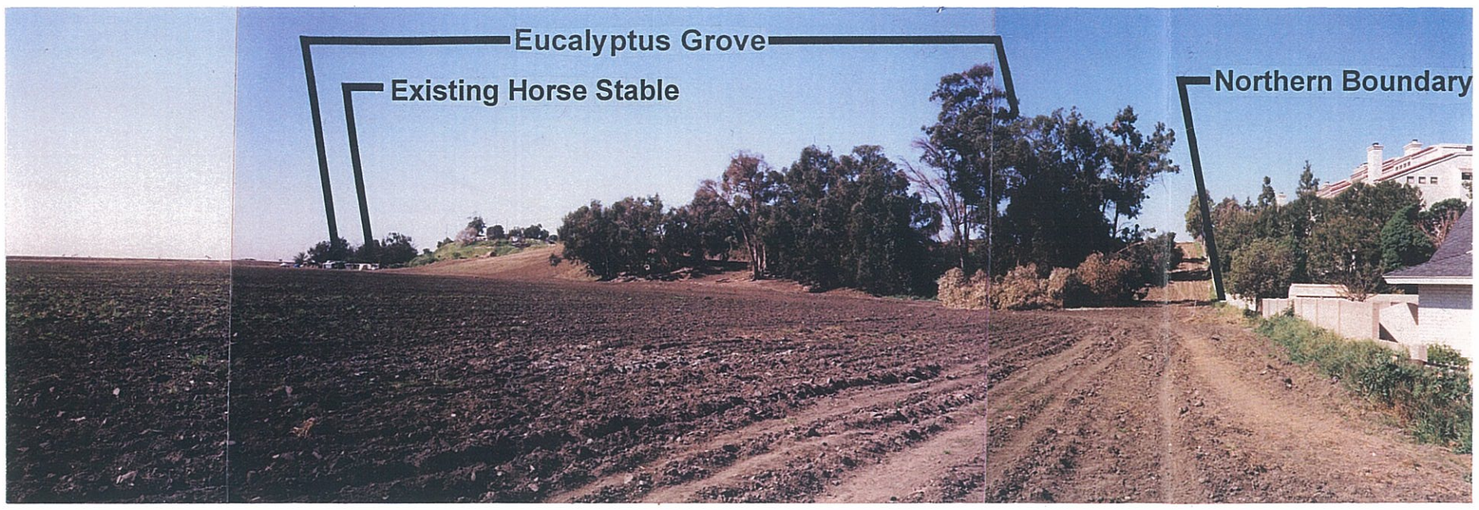
Scale: (approx.) 1"=200'

EDAW, Inc.

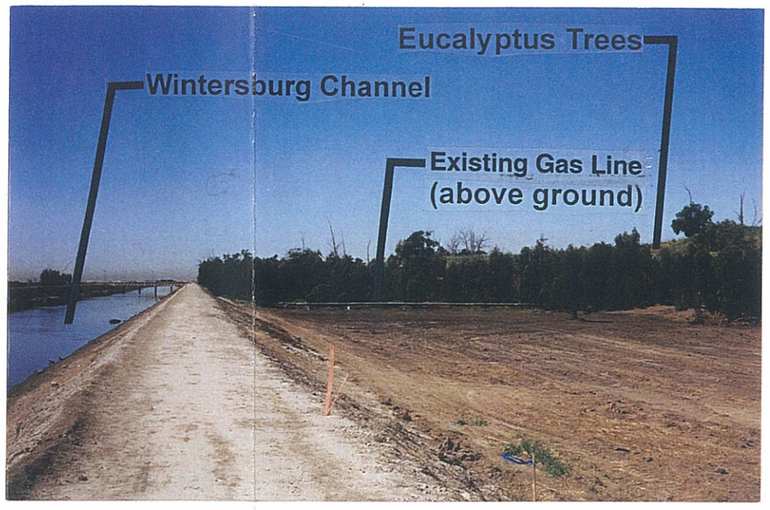
Source: EDAW, Inc.
Source: Hunsaker & Associates Irvine, Inc.



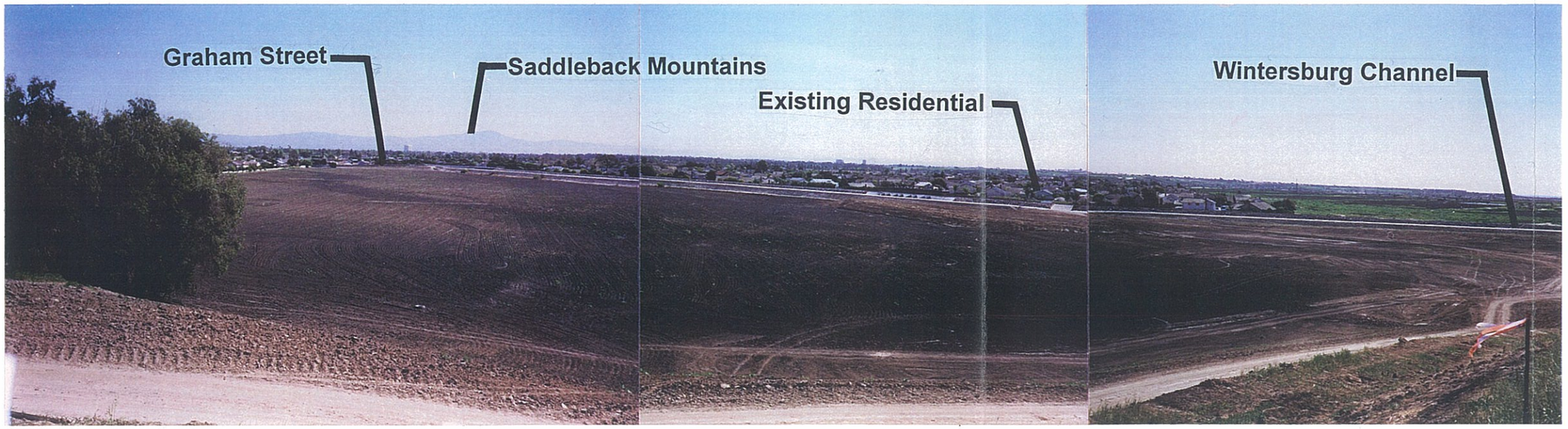
A View of Project Site Looking Northeast



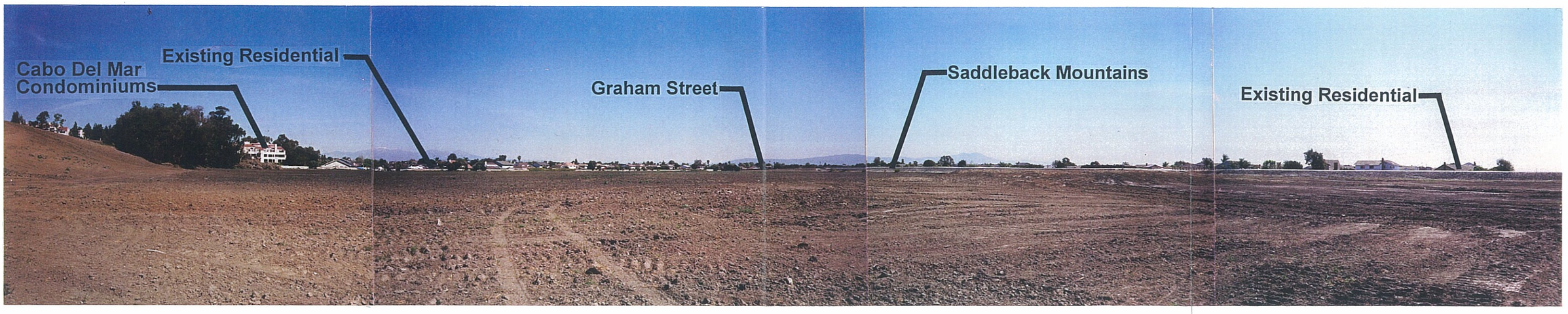
B View of the Northwestern Portion of Site



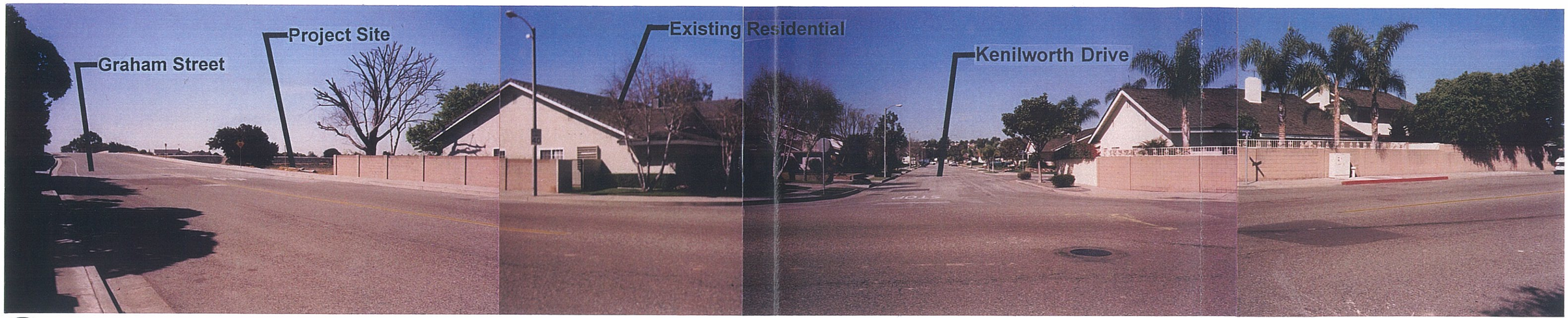
C View of the Southwestern Portion of Site



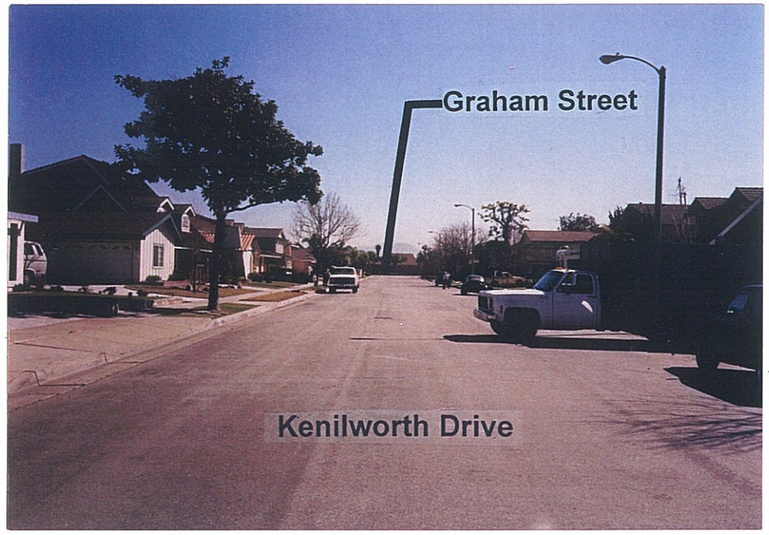
(D) View of the Project Site Looking Southeast



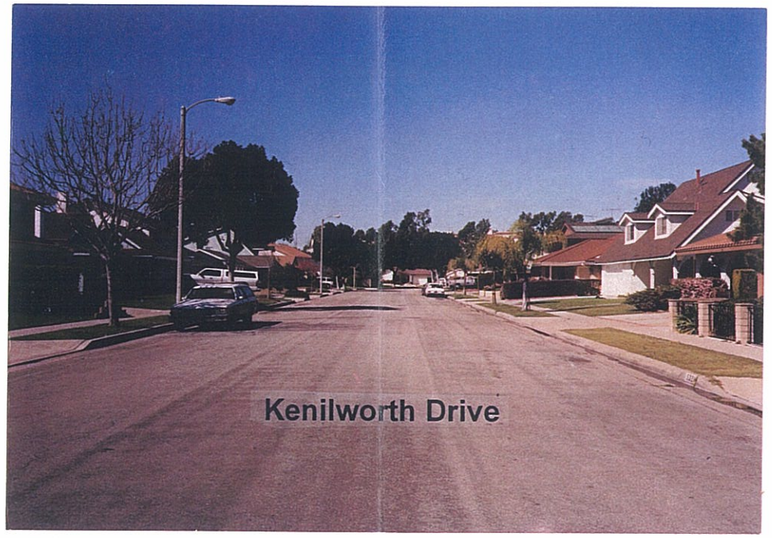
(E) View of the Project Site Looking Northeast



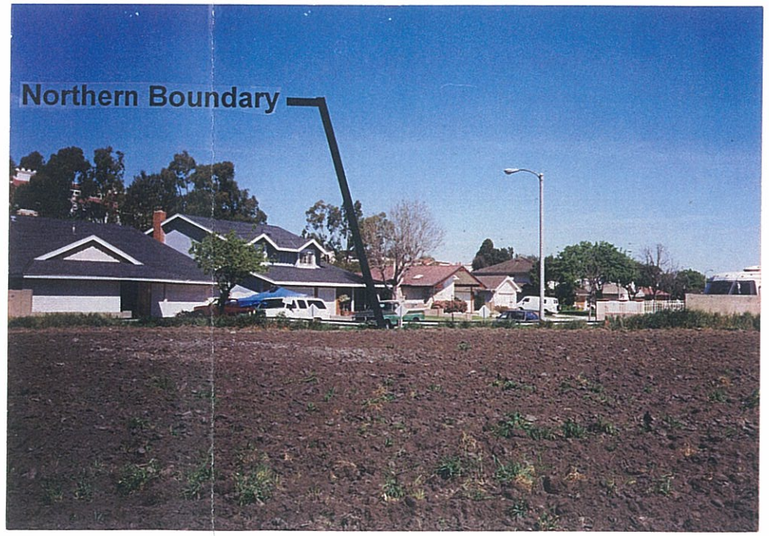
F **View From the Intersection of Graham Street and Kenilworth Drive Looking West**



G **View Along Kenilworth Drive Looking East**



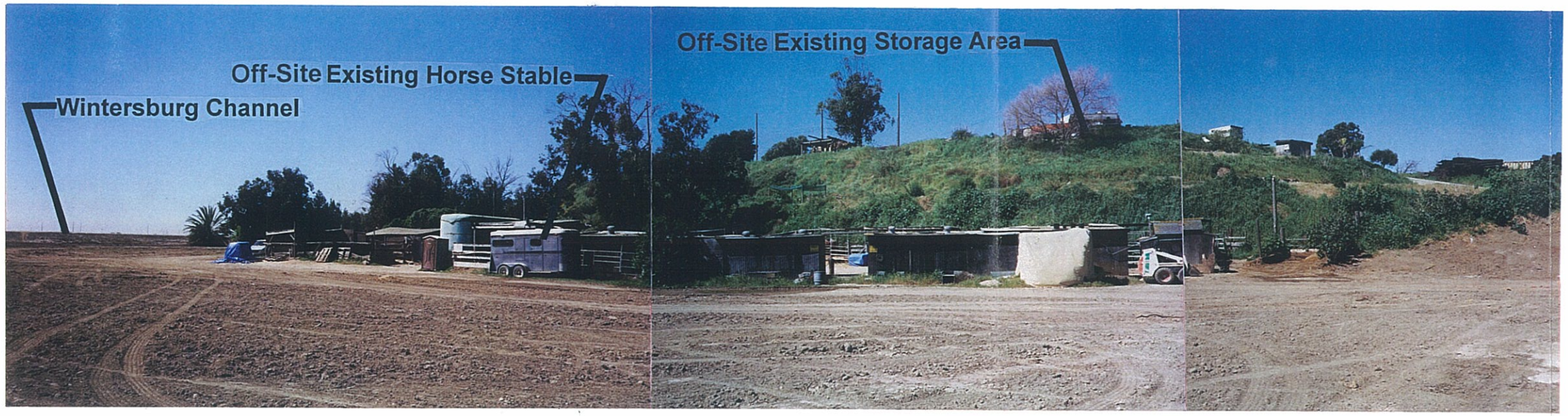
H **View Along Kenilworth Drive Looking West**



I **View of Northwestern Portion of Project Looking North**

J **View of Project Site Looking East**

K **View of Western Portion of Project Site LookingWest**



L **View Looking West of Existing Stables**

Exhibit 22, Site Photograph D, is a view from the top of the existing on-site knoll area in the northwestern portion of the project site looking southeast across the site. This photograph shows the existing off-site residential developments across the East Garden Grove - Wintersburg Channel and surrounding area. On-site eucalyptus trees can be seen in the left foreground of the site photo. Exhibit 22, Site Photograph E, is a view from the center of the project site looking northeast across the project site toward the existing off-site residential land uses. The on-site eucalyptus trees can be identified in the left portion of the photo. The Cabo del Mar condominiums, located off-site near the northwestern portion of the project site, can be seen beyond the on-site eucalyptus trees. The existing off-site residential uses located further east beyond Graham Street can be seen in the background.

Exhibit 23, Site Photograph F, is an off-site view from the intersection of Graham Street and Kenilworth Drive looking southwest across Graham Street. This photograph shows the off-site adjacent single-family residential community located directly north of the project site. Site Photograph G is a view from Kenilworth Drive looking east towards the intersection of Kenilworth Drive and Graham Street, while Site Photograph H is a view from Kenilworth Drive looking west towards the intersection of Kenilworth Drive and Greenleaf Lane. Site Photograph I is a view from the northwestern portion of the project site looking off-site, north toward the terminus of Greenleaf Lane and the existing residential development.

Exhibit 24, Site Photograph J, is a view from the southern boundary of the project site adjacent to the East Garden Grove - Wintersburg Channel looking northeast along the channel. Graham Street is depicted, as well as the existing off-site single-family residential located just beyond this street. The off-site Cabo del Mar condominiums (multi-family residential uses), located north of the project site, as well as the existing on-site eucalyptus grove, are depicted in the left portion of the photo. Exhibit 24, Site Photograph K, is a view from the western portion of the site looking west off-site towards the existing eucalyptus grove and off-site storage area. Exhibit 24, Site Photograph L, is a view from the western boundary looking further west. The photograph depicts the existing horse stable and associated storage area located off-site.

Surrounding Views

A few of the two-story residences located north of the project site currently maintain views of the vacant project site as well as the East Garden Grove - Wintersburg Channel, which is located just south of the site. With current elevations, a six-foot wall running along the majority of the boundary between the existing residences and the project site prohibits views of the project site from the back yards/first stories of the existing single-family homes. The current elevation of the project site area adjacent to the existing homes is approximately 2.0 feet below sea level, while the existing homes sit at approximately 1.0 foot above sea level. The raised flood control channel sits at approximately 10 to 12 feet above sea level. Some of the existing two-story residences along Kenilworth Drive maintain a slight view of the Bolsa Chica Area southwest of the project site, from their second stories. From this location, residents are also able to view the project site and the East Garden Grove - Wintersburg Channel.

The stands of eucalyptus trees, one (1) located in the northwestern portion and one (1) in the southwestern portion of the site, are visible from surrounding areas. Eucalyptus trees are typically viewed as aesthetic amenities. Several of the trees in the eucalyptus grove are either dying or dead. As indicated in Section 5.8 Biological Resources of this document, about one-third of the existing trees exhibit limb drop and crown death typical of drought-stressed eucalyptus. In order to determine the existing number and status of trees located on the project site, an arborist report was prepared by Alden Kelley, Consulting Arborist (refer to Appendix G of this document). According to this report, the stand of trees consists of 26 live mature trees, 8 dead or dying trees, a grove-like cluster of 3 multi-trunk trees, and several dozen smaller trees that are either natural seedlings or regrowth from stumps of felled trees.

Trails/Corridors

According to the City of Huntington Beach General Plan Circulation Element, the project site is located east of what is designated as a planned scenic route. The planned scenic route runs north-south along Bolsa Chica Street, and down along the City of Huntington Beach boundary (refer to Exhibit 25).

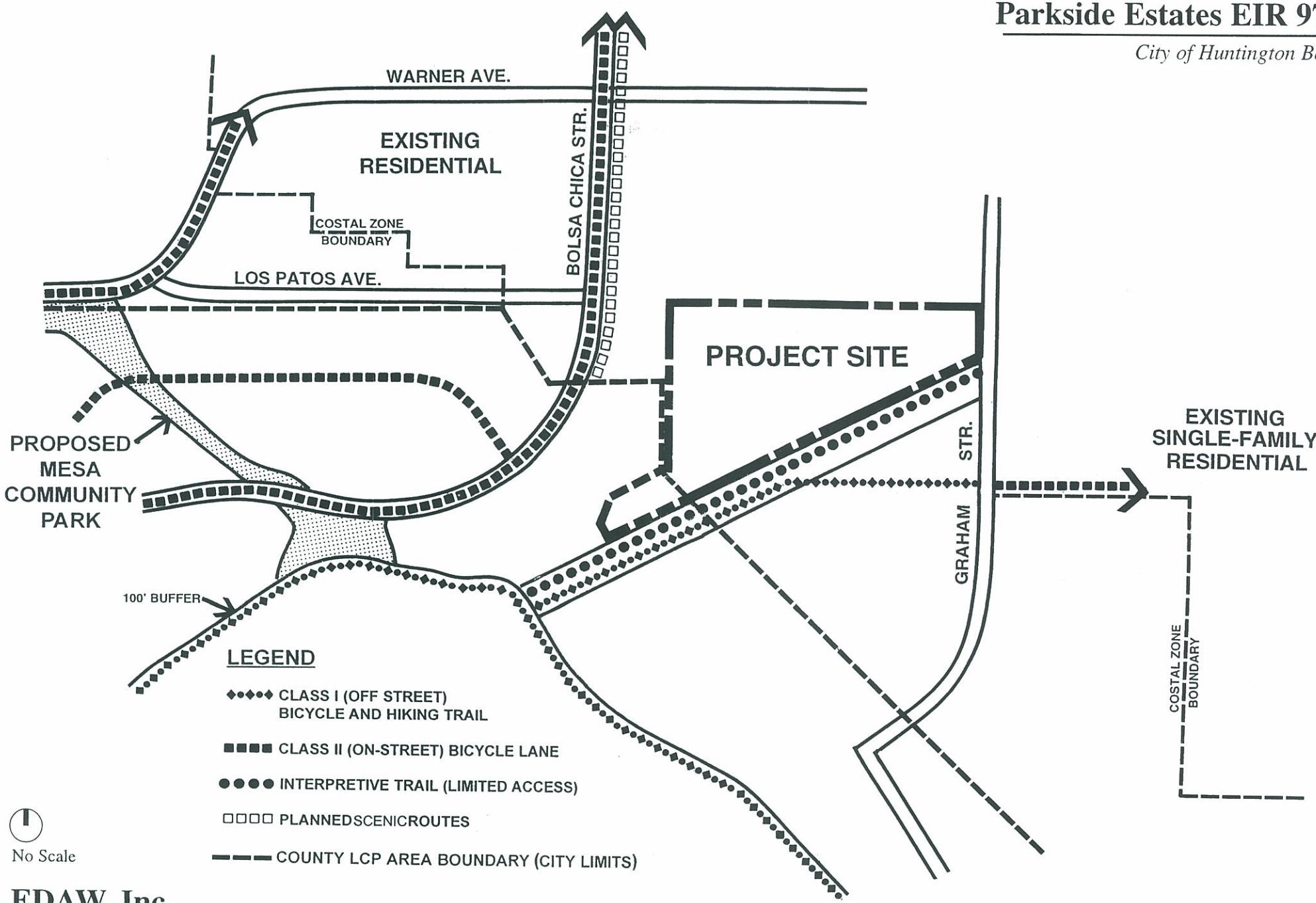
Figure 4.3-1 of the Bolsa Chica Local Coastal Program identifies Bolsa Chica Street as a proposed Class II Bicycle Lane (on-street bike lanes on both sides of the street). This lane would run north-south along Bolsa Chica Street, veering away from the project site at approximately 1,100 feet south of the intersection of Los Patos and Bolsa Chica Street in a northwesterly direction, paralleling the bluff edge toward the County LCP proposed Mesa Community Park.

The LCP also identifies an interpretive trail with limited access to be located along the East Garden Grove - Wintersburg Channel, south of the site. A proposed Class I (off-street) Bicycle and Hiking Trail is also proposed adjacent to the interpretive trail. Exhibit 25 identifies the proposed trails.

Light and Glare

On-Site

The majority of the site is undeveloped, and is therefore characterized by the absence of light and glare. The light that does occur within the project site is from nighttime illumination currently generated by the streetlights and vehicular lights associated with the surrounding area roadway, as well as the housing developments adjacent to the northern boundary.



EDAW, Inc.

Exhibit 25

Source: City of Huntington Beach
Source: County of Orange

City/County Designated Trails

Off-Site

Nighttime illumination in the immediate vicinity of the project is currently provided by street lighting along Graham Street and at the terminus of Greenleaf Lane.

The existing residential area adjacent to the northern boundary of the site also provides noticeable illumination at night from the backyard areas.

Vehicles traveling on the surrounding roadways produce glare in the immediate vicinity of the project site. The amount of glare experienced in the surrounding vicinity is typical for a suburban setting.

IMPACTS

Appendix G of the CEQA Guidelines serves as a guideline/general example of consequences that are deemed to have a significant effect on the environment. The project would typically have a significant aesthetics impact if it will:

(b) Have a substantial, demonstrable negative aesthetic effect.

For the purposes of this EIR, a significant impact would occur if implementation of the proposed project would result in an obstruction of any scenic views open to the public or the creation of an aesthetically offensive site open to public view. In addition, a significant light and glare impact would occur if implementation of the proposed project would result in a substantial adverse increase in light and glare on adjacent properties.

The proposed project will eliminate existing on-site uses, converting primarily open areas to suburban uses. Additionally, the project proposes to eliminate some of the eucalyptus trees that exist onsite. The significance of this effect related to aesthetics and light and glare on a project-specific and cumulative basis is discussed below.

Aesthetics

Buildout of the proposed project will permanently alter the existing visual environment of the project site. The undeveloped character of the site would be transformed into a developed setting. The development would eliminate the current open space view for pedestrians and vehicles passing by on surrounding roadways. This development may be perceived by some members of the community as a significant, negative aesthetic effect due to the placement of ~~208~~ ***206*** single family residential units on approximately 41 acres of what is currently undeveloped, open space.

As discussed within Section 3.4 History of Project of this document, the project site historically has been utilized for agricultural purposes since as far back as 1952. According to the *Historical*

Site Usage Report, prepared in July, 1997 by Hunsaker & Associates Irvine, Inc., based on a review of historical site photos taken from 1~~8~~*9*52 to 1997, the project site has been in various states of agricultural-type appearance (i.e., recently plowed, tilled, disced, vegetation, etc.).

The majority of the 44.5-acre portion of the project site is designated within the City General Plan as RL-7 Residential Low Density. This designation was placed on this property in 1971. The 4.5-acre portion of the project site is designated within the 1997 Bolsa Chica Local Coastal Program as Medium-Low Density Residential. Therefore, the 44.5-acre and 4.5-acre portions of the site have not been designated by the City or County General Plans as scenic open space. The project could be considered an infill project due to the fact that it is surrounded by existing residential to the north, west, and south (beyond the East Garden Grove - Wintersburg Channel).

The proposed project may result in significant aesthetic effects due to development of the proposed park on currently vacant land. Although the park is proposed to be developed on what is currently vacant, ~~3.6~~ ***3.8***± acres is proposed as flat useable park acreage, while ~~4.6~~***4.4***± acres would remain as open space. Additionally, the park is not proposing night-lighting. No impacts are anticipated due to the development of the proposed park.

Additionally, the applicant proposes development of single-family homes that will possess characteristics similar to the surrounding neighborhoods (refer to Section 5.1 Land Use of this document). The project proposes 18 different building elevations. An example of six (6) proposed building elevations are depicted on Exhibits 9 through 14 in Section 3.0 Project Description. Implementation of Mitigation Measure 1 will reduce impacts related to the conversion of the undeveloped project site to residential uses to a level less than significant.

Surrounding Views

The proposed project may impact existing views experienced by the second stories of the adjacent single family residences located directly north of the project site. The second stories of the existing residences currently maintain views to the south of the vacant project site and East Garden Grove - Wintersburg Channel. Some of the second stories are able to see the Bolsa Chica open space areas southwest of the site. Current elevations of the portions of the site subject to grading vary from -2.0 feet in the area adjacent to the residences to the north, to 7.4 feet near the East Garden Grove - Wintersburg Channel. The project proposes grading in order to remediate existing on-site soils through the removal and replacement of loose soils and the placement of additional fill dirt on-site. Grading will result in on-site landform grade elevation increases. The site elevation increase combined with construction of residential units adjacent to the existing residential to the north could block current views experienced by the residents.

In order to specifically assess potential impacts to the existing homes located off of Kenilworth Drive due to the proposed residential development, Exhibit 26 Section Key Map and Exhibit 27 Cross Sections were created. Exhibit 26 identifies the actual sections. Exhibit 27 identifies three (3) actual lots from three (3) sections that represent the overall situation of the existing homes. As indicated on Exhibit 27, Section ~~C-C~~ ***W-W***(homes located east of Cabo del Mar condominiums), the home within this section maintains a rear-yard setback of 25 feet. The home proposed to be located south of this home will be built on an elevation of 1.1, which is lower than the existing home's elevation of ~~1.7~~ ***1.9***. Additionally the proposed home will have a 41-foot rear-yard setback, which would result in 66 feet between the two homes.

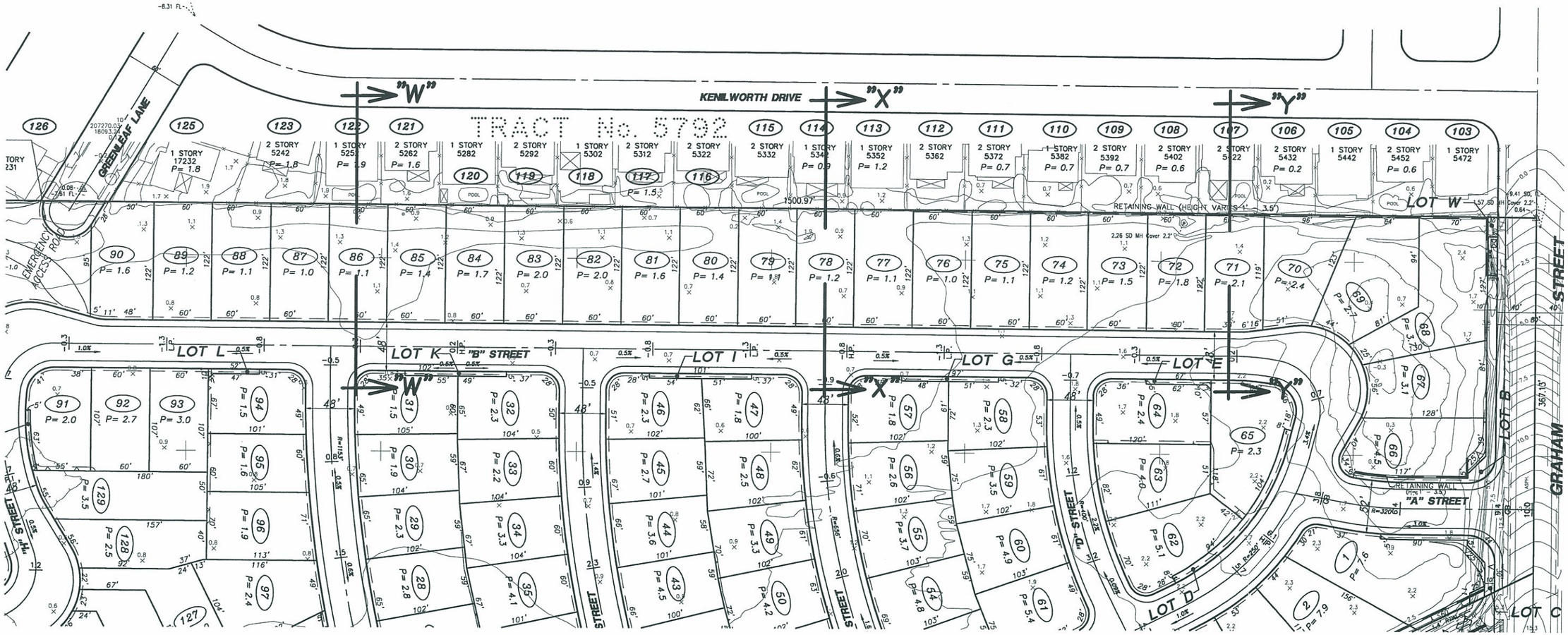
As indicated on Exhibit 27, Section ~~B-B~~ ***X-X***(homes located east of Section ~~C-C~~ ***W-W***), the home within this section maintains a rear-yard setback of 25 feet. The home proposed to be located south of this home will be built on an elevation of ~~.8~~***1.2***, which is ~~lower~~ ***slightly higher*** than the existing home's elevation of .9. ~~Additionally~~***However***, the proposed home will have a 44-foot rear-yard setback, which would result in 69 feet between the two homes.

As indicated on Exhibit 27, Section ~~A-A~~ ***Y-Y***(homes located east of Section ~~B-B~~ ***X-X***), the home within this section maintains a rear-yard setback of 35 feet. The home proposed to be located south of this home will be built on an elevation of 2.1, which is higher than the existing home's elevation of .4. However, the proposed home will have a 41-foot rear-yard setback, which would result in 76 feet between the two homes.

According to the project engineers, the proposed grading ***along the Northern property boundary*** will result in an average increase in landform grade elevation of two to three feet. This amount could be considered minimal due to the fact that the current elevations are below the landform elevations of the existing residential. However, the proposed residential building elevations would be greater than the existing residential to the north, and would impact the existing views experienced by the residential uses north of the project site (refer to Exhibit 27).

The City's Zoning and Subdivision Ordinance (ZSO) allows a maximum residential building height of 35 feet, with a required approval of a Conditional Use Permit by the Zoning Administrator for buildings exceeding 30 feet. As indicated on Exhibit 27, the height of the proposed residential units is approximately 29 feet; therefore, the building heights of the proposed homes are in conformance with City of Huntington Beach ZSO. Additionally, the ZSO requires a minimum rear yard setback of 10 feet. As indicated on Exhibit 27, the rear yard setbacks for the proposed homes adjacent to the existing homes off of Kenilworth Drive are approximately 40 feet. The project proposes a rear-yard setback that is well over the required standard. This is proposed to lessen the perceived change related to construction of the new homes. The overall distances between the proposed homes and the existing homes are great enough to provide a barrier between the homes. No impacts are anticipated.

The proposed project may affect existing views experienced by pedestrians and vehicles passing by along Graham Street due to the conversion of what is currently vacant land to residential uses.



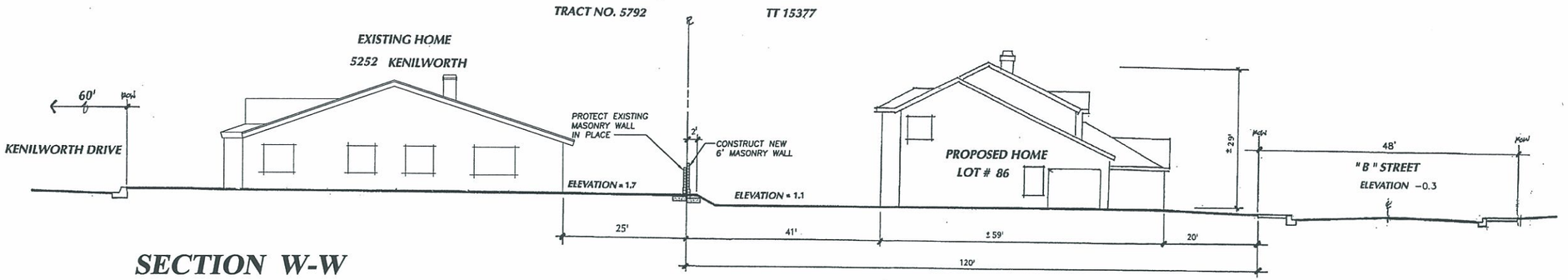
Scale: (approx.) 1"=100'

EDAW, Inc.

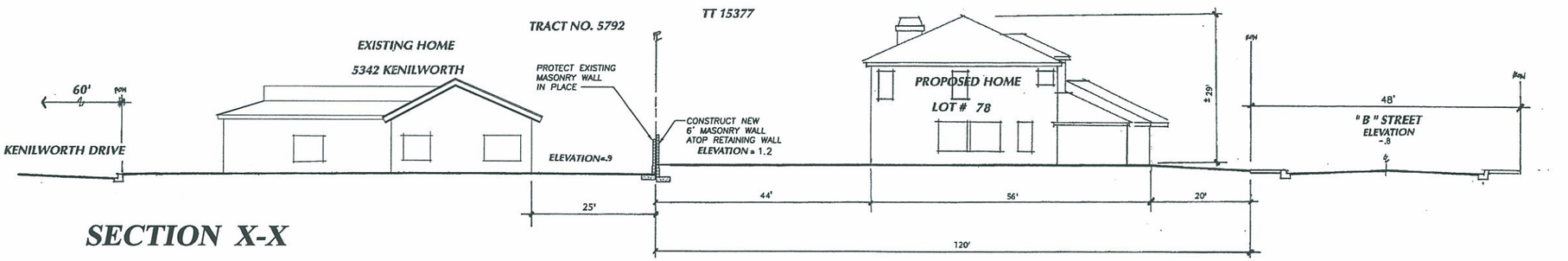
Source: Hunsaker & Associates Irvine, Inc.

Exhibit 26

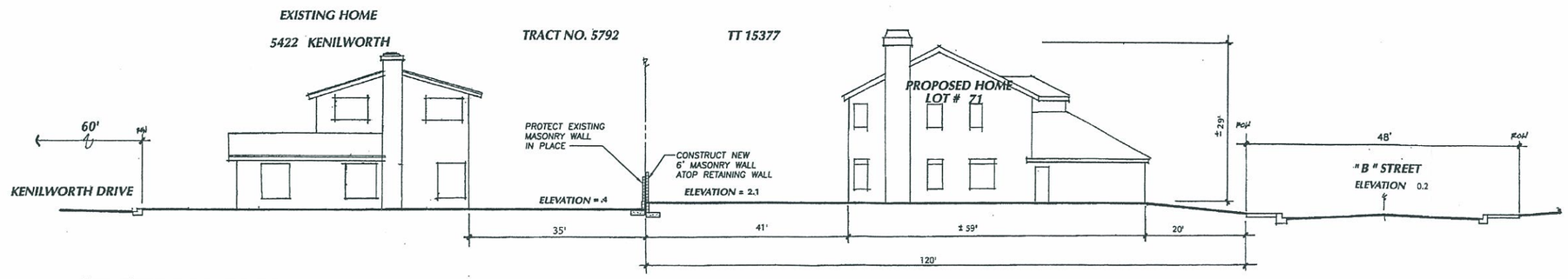
Section Key Map



SECTION W-W



SECTION X-X



SECTION Y-Y

See Section Key Map
For Cross-Section Locations

Scale: (approx.) 1"=20'

EDAW, Inc.

Source: Hunsaker & Associates Irvine, Inc.

Exhibit 27
Cross Sections

Although the view of the site will change, the majority of the project site has been designated for development of residential uses and therefore is consistent with the City Land Use Plan. Additionally, a privacy wall is proposed along Graham Street (along the rear property line of lots #66, #67, and #68). Landscaping will also be provided along this wall. As the project's entrance is proposed along Graham Street, the applicant proposes to coordinate the streetscape and landscape design of this area in order to strengthen the project's identity. Implementation of Mitigation Measure 2 will ensure that effects of the project on existing views experienced by pedestrians and vehicles passing by along Graham Street are reduced to a level less than significant.

Based on the results of the Arborist Report prepared for the proposed project, it has been recommended that the site developer remove all dead trees, young trees (which were judged unsuitable as preservation candidates, owing to their attenuated form and related susceptibility to windthrow), and 18 of the mature trees. Although eight (8) of the mature trees and the group of three (3) multi-trunked trees were designated for consideration as candidates for preservation, the removal of the remaining trees could be perceived by some as an aesthetics impact since eucalyptus trees are often subjectively and/or emotionally viewed as aesthetic amenities. The removal of any eucalyptus trees currently located in the County parcel of the project site could also be perceived by some as an aesthetics impact.

The City maintains a current condition, requiring replacement of all mature trees at a 2 to 1 ratio with 36-inch box trees. Additionally, the project includes a Conceptual Landscape Plan, which identifies landscaping proposed as part of the project. Exhibit 28 depicts the Conceptual Landscape Plan. Implementation of Mitigation Measure 3 will reduce impacts related to the removal of onsite trees to a level less than significant.

Trails/Corridors

The proposed project will not result in impacts to a City-proposed scenic route designated adjacent to the site. As indicated in Existing Conditions, the project site is located east of what is designated as a planned scenic route. The planned scenic route runs north-south along Bolsa Chica Street within the City of Huntington Beach. Any open space views of Bolsa Chica that would occur from this scenic route would not be affected by the proposed project. The project site is located at a lower elevation than the proposed scenic route; therefore, no views would be obstructed. No impacts to the City-proposed scenic route are anticipated.

Scale: (approx.) 1"=200'

EDAW, Inc.

Source: Frank Radmacher Associates, Inc.

Exhibit 28

Conceptual Landscape Plan

The proposed project may result in impacts to County-proposed trails. As depicted on Exhibit 25, the Bolsa Chica LCP identifies Bolsa Chica Street as a proposed Class II Bicycle Lane (on-street bike lanes on both sides of the street). This lane would run north-south along Bolsa Chica Street, veering away from the project site toward the County-proposed Mesa Community Park. The County of Orange also identifies an interpretive trail with limited access to be located along the East Garden Grove - Wintersburg Channel, south of the site (refer to Exhibit 25). A proposed Class I (off-street) Bicycle and Hiking Trail is also proposed adjacent to the interpretive trail. Implementation of Mitigation Measure 4 under Aesthetics will reduce potential impacts related to County-designated Trails/Corridors to a level less than significant.

Light and Glare

On-Site

The proposed project may result in a substantial adverse increase in light and glare in the surrounding area of the site. Implementation of the proposed project would introduce new light sources into the project area. Light sources are anticipated to occur from the illumination of on-site residences (i.e., interior and exterior lighting). Proposed light sources would be similar to those generated by existing adjacent residential. Mitigation Measures 1 through 3 under Light and Glare would reduce impacts related to residential lighting to a less than significant level.

Required street lighting will increase the source of night lighting within the area. The addition of nighttime lights to the project site is considered a significant impact. Mitigation has been proposed that requires the preparation of a plan showing the proposed height, location, and intensity of all the proposed street lighting. Mitigation Measures 1 through 3 under Light and Glare will reduce impacts to a less than significant level.

Glare impacts are primarily related to reflective surfaces of the buildings and vehicles which may be visible from one or more locations. Because reflective building materials are not allowed for residential units, the proposed project will not result in an increase in glare in the residential areas of the project site. No impact is anticipated.

The vehicular related glare will increase proportionately with the increased traffic generated from project development. The on-site vehicle-related increases in glare are not considered significant in a suburban setting. No impacts are anticipated.

Off-Site

Development of the project site will incrementally increase the amount of light and glare in the vicinity of the project. Outdoor lighting due to the project will contribute to the general night sky illumination. This overall illumination will be visible from the residences adjacent to the

northern boundary of the site, as well as adjacent roadways. Mitigation Measures 1 through 3 under Light and Glare will reduce this impact to a less than significant level.

Development of the project site will incrementally increase the amount of light and glare in the vicinity of the project and may impact the Bolsa Chica Preserve area south of the site. Outdoor lighting due to the project will contribute to the general night sky illumination. Standard City Policies and Mitigation Measures 1 through 3 under Light and Glare will reduce this impact to a less than significant level.

CUMULATIVE IMPACTS

Aesthetics

The proposed project, in conjunction with other past, present, and reasonably foreseeable future developments, will incrementally contribute to the changes to the perceived aesthetic quality of the local and regional area. It is anticipated that some members of the community will consider the cumulative loss of views to vacant land to have an adverse aesthetic impact. However, this project is an infill project within the City of Huntington Beach, and is designated as RL-7 Residential Low Density in the City General Plan and Medium-Low Density Residential in the County Local Coastal Program. Therefore, with implementation of project mitigation, the cumulative impacts as a result of the project are considered less than significant.

Light and Glare

The proposed residential development, in conjunction with other past, present, and reasonably foreseeable future projects, will incrementally contribute to the cumulative light and glare impacts. The project's incremental contribution to this impact will be mitigated to a less than significant level with the implementation of standard City Policies and Requirements and Light & Glare Mitigation Measures 1 through 3.

STANDARD CITY POLICIES AND REQUIREMENTS

A. Prior to submittal for building permits, the applicant/owner shall ensure that if outdoor lighting is included, high-pressure sodium vapor lamps or similar energy saving lamps shall be used. All outside lighting shall be directed to prevent "spillage" onto adjacent properties and shall be noted on the site plan and elevations.

MITIGATION MEASURES

Aesthetics

1. Prior to approval of building permits, the applicant shall provide proof of incorporation of City comments/conditions related to the overall proposed design and layout of buildings, and landscaping. This design and layout of buildings shall be approved by the City ~~Planning~~ Department ***of Planning***.

2. Prior to issuance of building permits, the applicant shall submit a landscaping plan for the area outside the perimeter wall along Graham Street to be reviewed and approved by the City ~~Planning~~ Department ***of Planning***.

3. Prior to approval of building permits, the applicant shall provide a Landscape Plan to be approved by the Department of Public Works and the ***Department of*** Planning ~~Division~~, which includes the replacement of all mature trees on the site at a 2:1 ratio with 36-inch box trees.

4. Prior to approval of building permits, the applicant shall submit ***a bikeways plan*** to the City of Huntington Beach Planning ~~Division~~ ***Department, in consultation with the Manager of the County PFRD/HBP Program Management and Coordination, for approval of consistency with the Orange County Bikeway Plan.*** ~~for approval of project consistency with the County Master Plan of Bicycle Trails~~.

Light and Glare

1. Prior to the approval of building permits, the applicant shall prepare a plan which shows the proposed height, location, and intensity of street lights on-site. The plan shall comply with minimum standards for roadway lighting, and shall be reviewed and approved by the City Planning and Public Works Department.

2. Prior to the approval of building permits, if outdoor lighting is to be included, energy saving lamps shall be used. All outside lighting shall be directed to prevent "spillage" onto adjacent properties and shall be shown on the site plan and elevations.

3. Non-reflective materials shall be utilized to the extent feasible. Individual building site plans shall be reviewed and approved by the City Planning and Public Works Department.

LEVEL OF SIGNIFICANCE

Aesthetics

The proposed project may be perceived as having a substantial, demonstrable, negative aesthetic effect due to the reduction of viewable open space areas. However, due to the fact that this area has been designated as RL-7 Residential Low Density in the City of Huntington Beach General Plan, and is in effect an infill project, implementation of Mitigation Measures 1 and 2 under Aesthetics will reduce the impact to a less than significant level.

The proposed project will result in the removal of eucalyptus trees, which could affect the current views of the site. Implementation of Mitigation Measure 3 will reduce impacts related to the removal of onsite trees to a level less than significant.

The proposed project will not result in impacts to a City-proposed scenic route designated adjacent to the site.

The proposed project may result in impacts to County-proposed trails. Implementation of Aesthetics Mitigation Measure 4 will reduce impacts to County-proposed trails to a level less than significant.

Light and Glare

On-Site

The project's development will increase the generation of light and glare on-site with on-site vehicle-related increases. In addition, the proposed project may result in an impact on the surrounding residential developments primarily to the north, and to some extent, to the east. However, implementation Mitigation Measures 1 through 3 under Light and Glare will reduce light and glare impacts to a level less than significant.

Off-Site

Lighting from the proposed development may result in light and glare impacts to adjacent off-site uses. Implementation of Light and Glare Mitigation Measures 1 through 3 will reduce Light and Glare Impacts to a level less than significant.

5.3 TRANSPORTATION/CIRCULATION

The information contained in this section is summarized from the Traffic Study for the Graham Street Residential Development, June 27, 1997, prepared by Darnell and Associates, Inc. The traffic study has been prepared in accordance with the City of Huntington Beach Traffic Impact Assessment Preparation Guidelines, July 1993. Discussions were held with the City of Huntington Beach traffic engineering staff prior to preparation of this study to establish the project scope, methodology, and technical assumptions. The report is provided in Technical Appendix B of this EIR.

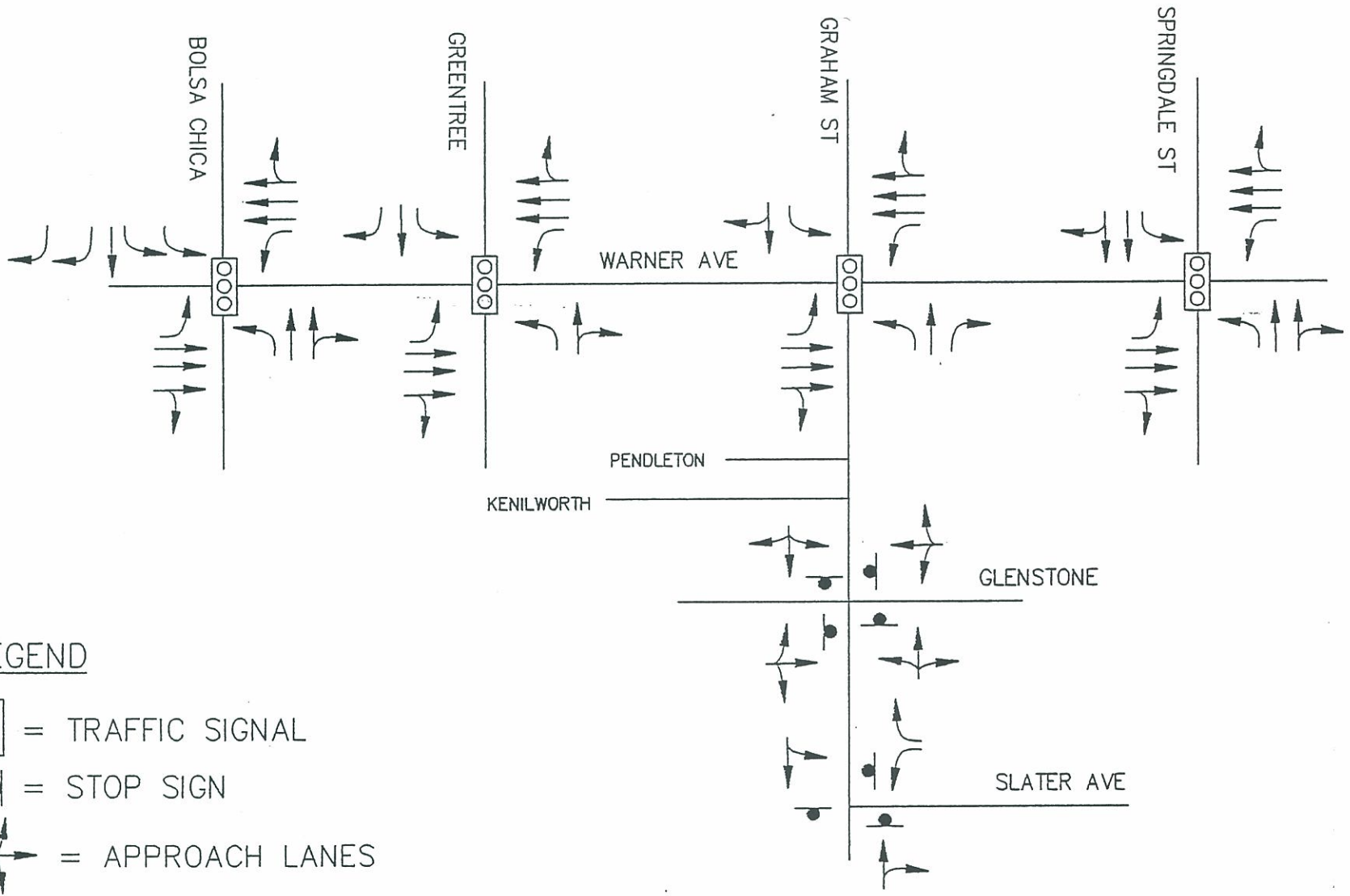
EXISTING CONDITIONS

Surrounding and On-Site Street System

Primary regional access in Huntington Beach is provided by I-405 (San Diego Freeway), a north-south freeway located to the east of the site. Primary local east-west access to the project site will be along Warner Avenue, while north-south access will be along Graham Street. A short description of these facilities follows. Exhibit 29 illustrates the existing street system in the vicinity of the site, including intersection configurations and traffic signal and stop sign locations. As can be seen in Exhibit 29, the four (4) intersections along Warner Avenue are signalized. The Graham Street intersections are operated by stop sign control.

Warner Avenue - Warner Avenue is a six-lane east-west roadway which has a raised median and intermittent left-turn pockets between Springdale Street and Bolsa Chica Street. Parking is prohibited. Bike lanes are provided on both sides of Warner Avenue between Springdale Street and Bolsa Chica Street. Land uses along Warner Avenue near the project site include commercial, retail, office, and school facilities. The speed limit on Warner Avenue is generally 50 miles per hour (MPH). According to the City's Circulation Element, Warner Avenue is currently designated as a truck route.

Graham Street - Graham Street is currently a two lane commuter road which provides 64' of pavement from Warner Avenue to the proposed project access. South of this access to Glenstone, the road narrows to 52' due to the overcrossing of the flood control channel. This roadway also provides bikelanes. The speed limit on Graham Street is generally 40 MPH.



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EDAW, Inc.

Source: Darnell & Associates, Inc.

Exhibit 29

Existing Intersection Geometrics

Existing Traffic Volumes

Average Daily Traffic (ADT) is the total volume of traffic passing on a roadway on an average day of the year. ADT data is used to determine the amount of use a given roadway segment experiences on an average day. Exhibit 30 summarizes the roadway links ADT volumes on the two study segments. This Exhibit also depicts the (AM/PM peak hour) traffic volumes at the six (6) study intersections. Manual traffic counts (AM/PM peak hours) at the intersections were conducted in October of 1996. Daily traffic volumes were collected on Graham Street and on Warner Avenue between Greentree and Graham Street in October 1996. Other daily traffic on Warner Avenue was assembled from the Bolsa Chica Traffic Study and represents 1994 traffic volumes. It should be noted that the October 1996 counts do not demonstrate a significant change from 1994 volumes.

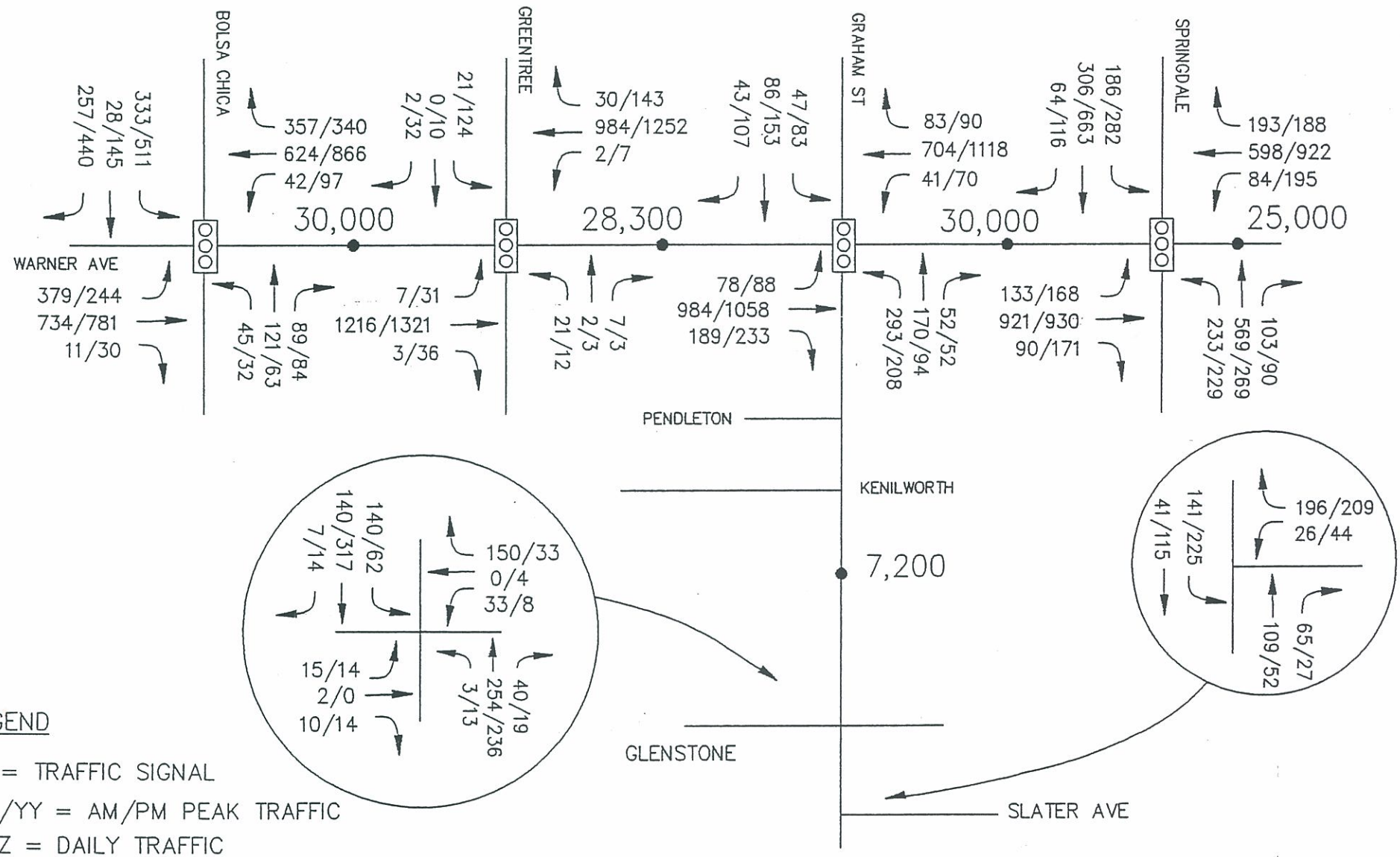
Existing Intersection and Roadway Segment Level of Service (LOS)

Roadway capacity is generally limited by the ability to move vehicles through intersections. Level of Service (LOS) is a measure of "quality of flow," and as shown in Table D, there are six levels of service, A through F, which relate to traffic congestion from best to worst, respectively. In general, Level A represents free-flow conditions with no congestion. Conversely, Level F represents severe congestion with stop-and-go conditions. Levels E and F typically are considered to be unsatisfactory.

Corresponding to each level of service shown in Table D is a volume-to-capacity (V/C) ratio. Generally speaking, this is the ratio of an intersection's traffic volume (V) to its capacity (C), with capacity defined as the theoretical maximum number of vehicles that can pass through the intersection during a specified period of time. In accordance with the City of Huntington Beach *Traffic Impact Assessment Procedure Guidelines*, these level of service determinations were made for signalized intersections using the methodology commonly referred to as Intersection Capacity Utilization (ICU). With this technique, an intersection's ICU value (i.e., a V/C ratio) is computed based upon the intersection's traffic volumes and its traffic-carrying capacity. Stop sign controlled intersections were analyzed with the Highway Capacity Manual (HCM) methodology.

Level of service for roadway links is quantified in terms of a volume/capacity (V/C) ratio. Similar to intersection V/C ratio, this V/C ratio is a quantitative comparison of a roadway segment's demand or volume to its theoretical maximum traffic-carrying per lane capacity. Table E identifies the corresponding roadway segment's V/C ratio to each level of service.

The City of Huntington Beach has determined that LOS C or better is the acceptable standard for roadway links, while LOS D or better is the acceptable standard for intersections.



LEGEND

= TRAFFIC SIGNAL

XX/YY = AM/PM PEAK TRAFFIC

ZZZ = DAILY TRAFFIC

No Scale

EDAW, Inc.

Source: Darnell & Associates, Inc.

Exhibit 30

Existing Traffic Volumes

TABLE D

LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS[1]

Level of Service	Interpretation	ICU[2]
A	Uncongested operations; all vehicles clear in a single cycle.	0.00 - 0.60
B	Uncongested operations; all vehicles clear in a single cycle.	0.61 - 0.70
C	Light congestion; occasional backups on critical approaches.	0.71 - 0.80
D	Congestion on critical approaches, but intersection functional. Vehicles required to wait through more than one cycle during short peaks. No long-standing lines formed.	0.81 - 0.90
E	Severe congestion with some long-standing lines on critical approaches. Blockage of intersection may occur if traffic signal does not provide for protected turning movements.	0.91 - 1.00
F	Total breakdown with stop-and-go operations.	1.010+

[1] Source: *Highway Capacity Manual*, Transportation Research Board Number 212, January 1990.
[2] Intersection Capacity Utilization.

TABLE E

LEVEL OF SERVICE CRITERIA FOR ROADWAY SEGMENTS[1]

Level of Service	Interpretation	Nominal Range to Volume-to-Capacity Ratio
A	Low volumes; primarily free-flow operations. Density is low, and vehicles can freely maneuver within the traffic stream. Drivers can maintain their desired speeds with little or no delay.	0.00 - 0.60
B	Stable flow with potential for some restriction of operating speeds due to traffic conditions. Maneuvering is only slightly restricted. The stopped delays are not bothersome, and drives are not subject to appreciable tension.	0.61 - 0.70
C	Stable operations; however, the ability to maneuver is more restricted by the increase in traffic volumes. Relatively satisfactory operating speeds prevail, but adverse signal coordination or longer queues cause delays.	0.71 - 0.80
D	Approaching unstable traffic flow, where small increases in volume could cause substantial delays. Most drivers are restricted in their ability to maneuver and in their selection of travel speeds. Comfort and convenience are low but tolerable.	0.81 - 0.90
E	Operations characterized by significant approach delays and average travel speeds of one-half to one-third the free-flow speed. Flow is unstable and potential for stoppages of brief duration. High signal density, extensive queuing, or progression/timing are the typical causes of the delays.	0.91 - 1.00
F	Forced-flow operations with high approach delays at critical signalized intersections. Speeds are reduced substantially, and stoppages may occur for short or long periods of time because of downstream congestion.	1.010+

[1] Source: *Highway Capacity Manual*, Transportation Research Board, 1965.

The analysis of existing intersection levels of service was based upon the peak-hour traffic volumes illustrated on previously referenced Exhibit 32 and the existing intersection geometrics depicted on previously referenced Exhibit 29. Table F summarizes the existing levels of service at the six (6) study intersections during the peak hours. As can be seen in Table F, all intersections currently operate at LOS C or better for both peak period with existing traffic volumes.

A daily traffic volume analysis was conducted by comparing daily traffic to volume thresholds for roadway classifications. Thresholds for roadway classifications are published in the City of Huntington Beach's Traffic Impact Assessment Preparation Guidelines. The results are presented in Table G. As can be seen in Table G, all segments on Warner Avenue and Graham Street currently operate within acceptable levels of service. (Note: The ICU level-of-service computations are contained in the Appendix of the traffic report which is contained in Appendix B of the EIR).

Signal Warrant Analysis/Traffic Signalization

As stated previously, Exhibit 29 identifies the location of existing traffic signals in the vicinity of the project site. Currently, the existing site does not contain any signalized access. A traffic signal warrant analysis was performed for future conditions with the project. The results of this warrant analysis are presented in the Impact Section of this discussion.

Site Access/Circulation

Since the existing site is presently vacant land, formerly used for farming, no formal access to the site currently exists.

Parking

Since the existing site is presently vacant land, formerly used for farming, no parking presently exists on-site.

IMPACTS

Appendix G of the CEQA Guidelines serves as a guideline/general example of impacts that are considered normally to have a significant effect on the environment. A project would typically have a significant transportation/circulation impact if it will:

(l) cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system.

TABLE F

SUMMARY OF INTERSECTION LEVEL OF SERVICE

Intersection	Existing Conditions				Existing Plus Project Conditions				Short Term Cumulative Conditions			
	AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS
Bolsa Chica/Warner	0.62	B	0.62	B	0.63	B	0.63	B	0.64	B	0.64	B
Greentree/Warner	0.31	A	0.41	A	0.31	A	0.43	A	0.32	A	0.44	A
Graham/Warner	0.55	A	0.61	B	0.59	A	0.67	B	0.61	B	0.69	B
Springdale/Warner	0.61	B	0.74	C	0.61	B	0.74	C	0.62	B	0.75	C
Graham/Glenstone (stop)	N/A	B	N/A	A	N/A	B	N/A	A	N/A	B	N/A	A
Graham/Slater (stop)	N/A	A	N/A	A	N/A	A	N/A	B	N/A	A	N/A	B

Source: Darnell & Associates, Inc.

(1) Refer to the Appendix of the traffic study for ICU calculation worksheets.
(2) Refer to Table D for intersection Level of Service definition.
(3) LOS = Level of Service defined using ICU methodology for signalized intersections
(4) Stop controlled intersections were analyzed with HCM methodology

TABLE G

SUMMARY OF ROADWAY LINK LEVEL OF SERVICE

Segment	Class	LOS D Capacity	Exist ADT	V/C	LOS	Exist + Project ADT	V/C	LOS	Short Term Cumulative ADT	V/C	LOS
Warner Avenue											
• Bolsa	6 Major	48,600	30,000	0.56	A	30,625	0.58	A	31,915	0.59	A
Chica/Greentree	6 Major	48,600	28,300	0.52	A	29,050	0.54	A	30,340	0.56	A
• Greentree/Warner	6 Major	48,600	30,000	0.56	A	30,500	0.56	A	31,530	0.58	A
• Warner/Springdale	6 Major	48,600	25,000	0.46	A	25,250	0.47	A	26,280	0.49	A
• East of Springdale											
Graham Street											
• Glenstone/"A" Street	2 Commuter	11,700	7,200	0.55	A	8,200	0.63	B	10,780	0.83	D
• "A" Street/Warner	2 Commuter	11,700	7,200	0.55	A	8,700	0.67	B	11,280	0.87	D

Source: Darnell & Associates, Inc.

(1) LOS = Level of Service
(2) Capacity per City of Huntington Beach TIA Guidelines
(3) ADT = Average Daily Traffic
(4) V/C = Volume to Capacity Ratio
(5) Refer to Table E for roadway segment link Level of Service definition.

According to the City of Huntington Beach performance criteria established in the Traffic Impact Assessment Preparation Guidelines, a traffic increase is considered a significant impact if LOS C could not be achieved for the roadway segments and/or if LOS D could not be achieved for the intersections impacted by the proposed project within the community. Additionally, impacts to access/internal circulation and pedestrian safety are considered a significant impact if the proposed roadways and access points do not conform to City standards. Lastly, a project will have a significant impact if it results in significant effects on existing parking facilities, or creates a demand for new parking. For purposes of this EIR, increases in a parking demand which exceeds the supply will be considered significant.

The proposed project will increase vehicular traffic on the existing and future roadway system. The project will establish new site access and provide an on-site circulation system including new parking supply. Additionally, the proposed project in conjunction with past, present, and reasonably foreseeable future projects will incrementally contribute to a cumulative increase in vehicular traffic in the local vicinity. These increases and the adequacy of the on-site circulation system and parking are considered potential impacts. The significance of each is described below related to the above criteria.

Construction Traffic

Construction related traffic would be associated with workers arriving and leaving the project site, and truck and construction vehicle traffic. Construction worker traffic is not anticipated to create a significant impact to area-wide circulation. Potential construction related impacts on local traffic and circulation would be short-term in nature. The total estimate construction time frame for the grading is six (6) months and project construction is approximately two and one-half years. Mitigation Measure 1 will mitigate short-term construction related impacts to a level of less than significant.

Haul Route Traffic

The proposed project will result in short-term transportation/circulation impacts due to implementation of the grading component of the proposed project. Construction/grading vehicles will be hauling dirt from proposed borrow site(s), as described in Section 3.0 of this EIR, to the project site. They will be traveling from the borrow site to the project site fill areas via a "haul road." The location of the haul road(s) will depend on the location of the borrow site(s). If an adjacent borrow site can be utilized, no traffic impacts are anticipated since the haul route (refer to Exhibit 15 in Section 3.0) would not occur on public roadways. Should a different local borrow site be required, the haul route would utilize the public street system. Mitigation Measure 1 is proposed to ensure use of the public streets for a haul route would not result in significant traffic impacts.

Signal Warrant Analysis/Traffic Signalization

The proposed project may impact the circulation system by the introduction of an additional access along Graham Street. A signal warrant analysis using Caltrans' Peak-Hour Traffic Signal Warrant was conducted for the project entry ("A" Street) on Graham Street. Under this configuration, the intersection will warrant a traffic signal (Refer to the Appendix of the TIA included in Appendix B of this EIR for signal warrant analysis worksheets). Mitigation Measure 2 is proposed which requires the construction of this signal prior to project occupancy. Based upon the distance of the new signal on Graham Street to other existing traffic signals along Graham Street and traffic volumes along Graham Street, the introduction of this new signal will not negatively impact the existing circulation system.

Project Traffic

The proposed project will generate an increase in existing daily vehicle trips. Due to increases in vehicles, roadway capacity will be impacted. This impact is discussed in greater detail below. A three step process was utilized to estimate project-related traffic impacts and evaluate their significance at various points on the street network. First, the traffic which will be generated by the proposed development was determined. Secondly, the traffic volumes were geographically distributed to major attractions of trips, such as employment centers, commercial centers, recreational areas or residential areas. Finally, the trips were assigned to specific roadways and the project-related traffic volumes are analyzed using ICU/LOS techniques.

Traffic Generation

Trip generation for the proposed land use was obtained from the San Diego Association of Governments (SANDAG) Traffic Generators. This publication is based on the Institute of Transportation Engineers (ITE) Trip Generation Manual. Daily and peak hour generation was approved by the City of Huntington Beach prior to performing the traffic analysis. The rates and calculations for the site are summarized on Table H. As can be seen in Table H, the project has the potential to generate 2,496 daily vehicular trips. During the morning peak hour, the site will generate 200 trips and 250 trips are expected to occur in the evening peak hour.

The project also proposes a small neighborhood park (± 3.5 acres of usable area) within the development. For the purposes of this analysis, it was assumed that trips generated by the project include use of the park. Although there may be some outside attraction to the park, these trips would be considered insignificant to traffic flow. It should also be noted that park trips generally occur outside of the peak hour and therefore would have little effect on the intersection analyses.

Trip Distribution and Assignment

Traffic distribution is the determination of the directional orientation of traffic. Traffic distribution is based on the geographical location of employment centers, commercial centers, recreational areas, or residential concentrations.

Trip distribution for the project was estimated using likely travel routes and destinations, as well as access and proximity to traffic generators, such as freeways, shopping centers, etc. This project proposes one access point onto Graham Street at "A" Street. Trip distribution patterns were approved by the City of Huntington Beach prior to performing the traffic analysis. Trip distribution for the project is depicted on Exhibit 31.

TABLE H

SUMMARY OF TRIP GENERATION RATES & CALCULATIONS

Trip Generation Rates[1]								
Single Family	Daily:	12 trips per unit						
	AM Peak:	8% of daily split 30:70 (inbound:outbound)						
	PM Peak:	10% of daily split 70:30 (inbound:outbound)						
Land Use	**Density**	**Average Daily Traffic**	**AM Peak Hour**			**PM Peak Hour**		
			In	**Out**	**Tot**	**In**	**Out**	**Tot**
Single Family	208 Units	~~2,496~~ *2,472*	60	140	200	175	75	250

Source: Darnell and Associates, Inc.

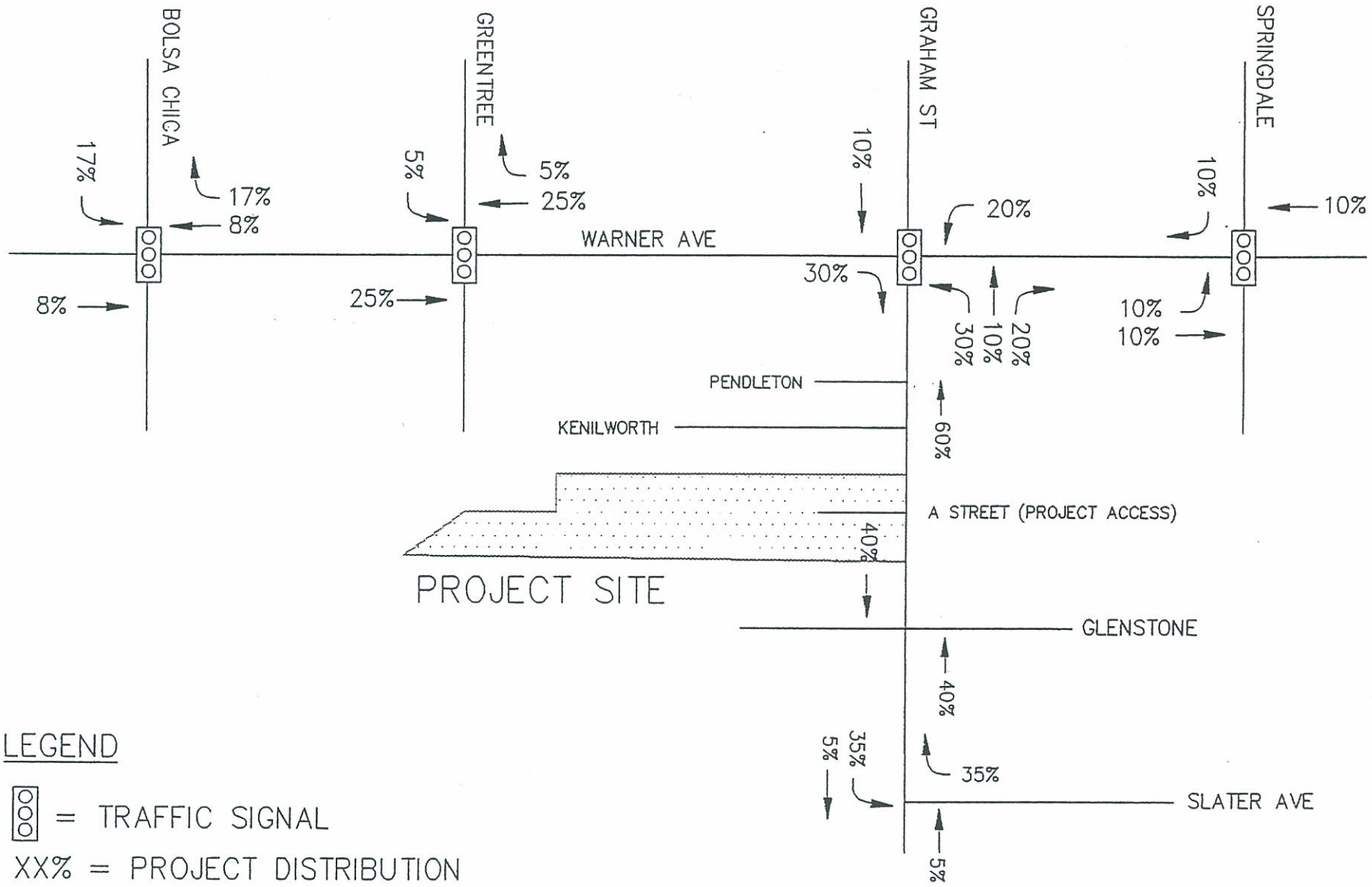
[1]Rates per SANDAG Traffic Generators

Traffic volumes associated with the distribution percentages were assigned to the study intersections. These volumes are presented on Exhibit 32.

The actual impacts that the Project trips have on the surrounding roadway system are discussed under the section which follows.

Existing Plus Project Traffic

The traffic volumes presented in Exhibit 32 were added to the existing traffic volumes to provide the condition of existing plus project traffic. These volumes are presented on Exhibit 33.



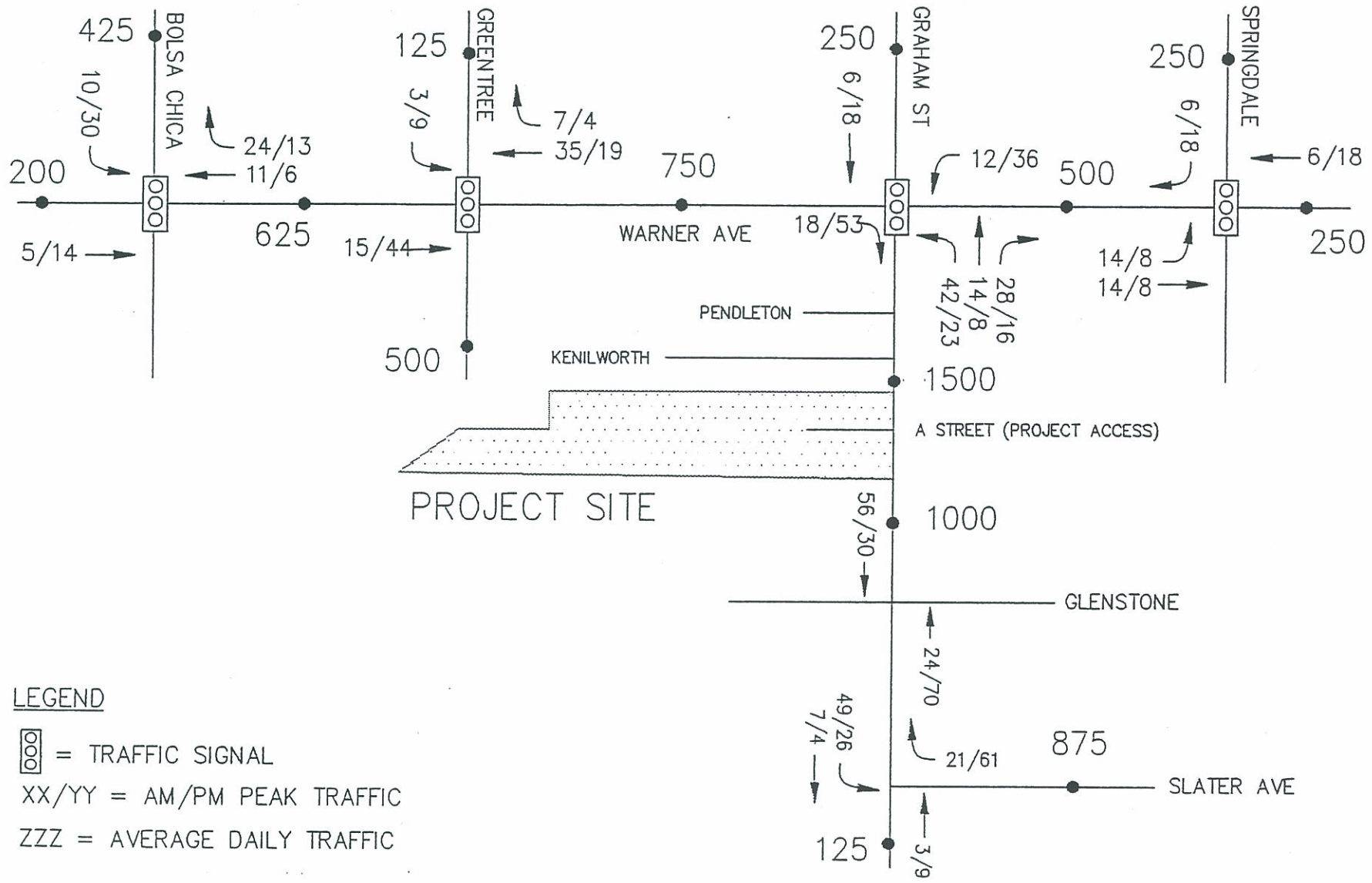
No Scale

EDAW, Inc.

Source: Darnell & Associates, Inc.

Exhibit 31

Project Trip Distribution



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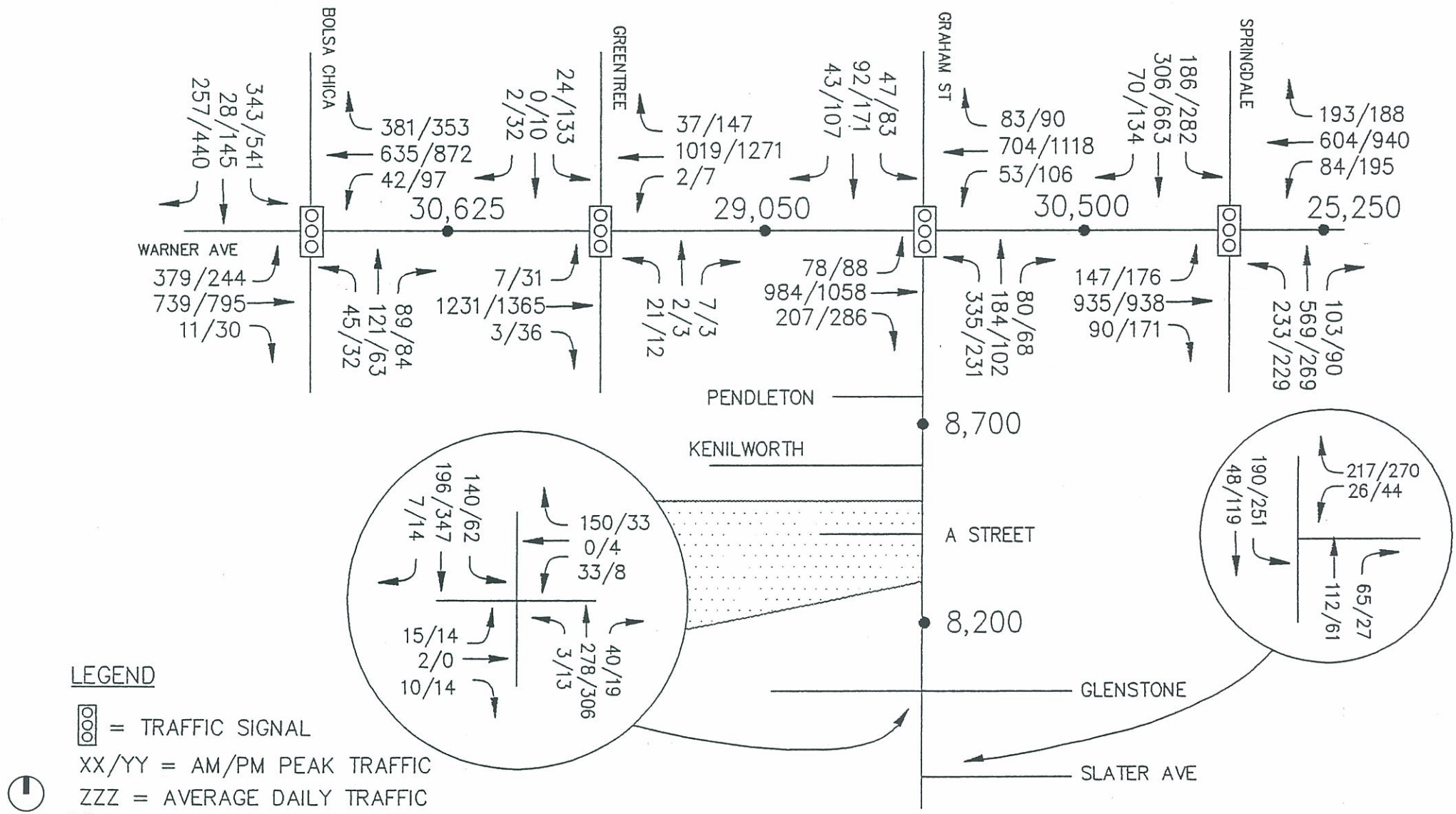
EDAW, Inc.

Exhibit 32

Source: Darnell & Associates, Inc.

Project Daily and Peak Hour Traffic Volumes



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EDAW, Inc.

Source: Darnell & Associates, Inc.

Exhibit 33

Existing Plus Project Traffic Volumes

Existing Plus Project Levels of Service

Review of Table F (contained in Existing Conditions) shows that with the addition of project traffic, all study intersections will continue to operate at acceptable levels of service. No project-specific impacts to intersections have been identified. No intersection improvements are required as a result of project traffic. ICU worksheets are included in the Appendix of the traffic study which is included in Appendix B of the EIR.

The addition of project related daily traffic to roadway segments does not cause a level of service deficiency as evidenced in the roadway capacity summary on Table G (contained in Existing Conditions). No project-specific impacts to roadway links have been identified.

Site Access/Circulation

Increased activity on-site and in the vicinity of the project could expose pedestrians and bicycles to traffic hazards. The project proposes unrestricted access (i.e., not gated) at the intersection of A Street (new project street) and Graham Street. According to the City Traffic and Fire Department(s), this access (along with secondary "emergency only" access) is adequate to serve the proposed project. Refer to Section 6.0 of this EIR for a discussion of alternative access points/roadway connections. The intersection of "A" Street and Graham Street was analyzed for existing plus project conditions, assuming one lane for exiting vehicles and a left turn pocket for northbound Graham Street. The analysis was performed with stop control on A Street. Project traffic volumes for this scenario are depicted on Exhibit 37 at the end of this section. For both the morning and evening peaks, north/south movement on Graham Street operates at LOS A. The eastbound left/right operates at LOS C.

As stated previously, a traffic signal is required at the intersection of "A" Street and Graham Street. The signal at the project access will reduce pedestrian traffic hazards at this location. Sidewalks shall also be constructed to City Standards and Americans with Disabilities Act (ADA) requirements and Mitigation Measure 3 will ensure this occurs.

Sight Distance

Corner sight distance based on prevailing speeds was measured in the field to determine the ability of motorists traveling northbound on Graham Street and eastbound on "A" Street to see each other.

Based on City provided speed surveys taken in 1994, the 85th percentile speed on Graham Street between Warner Avenue and Slater Avenue is 45 mph and the posted speed limit is 40 mph. Because the sight distance analysis was performed for northbound traffic only and since there is a stop sign on Graham at Glenstone approximately 700 feet south of the proposed "A" Street, a new speed survey was conducted to determine if the stop sign on Graham Street at Glenstone had a

significant effect on prevailing speeds for northbound traffic just south of "A" Street. The results for the northbound direction of travel shows that the 85th percentile speed is 40 mph. Based on City comments, corner sight distance was calculated based on 45 mph.

Using the Caltrans Highway Design Manual, Table 405.1A, corner sight distance for a 45 mph road is approximately 500 feet. This distance is measured from a 3.5' height at the location of the driver on the minor road to a 4.25' object height in the center of the approaching lane of the major road. Based on existing topography, the 500' of corner site distance at "A" Street was not attainable. This is considered a project-specific impact.

Signalization of Graham Street/"A" Street (required by Mitigation Measure 2) would eliminate left turn safety concerns at this location. ~~Alternative options may include secondary access through residential neighborhoods combined with left turn prohibition at the Graham Street/A Street access.~~

To further enhance safety at the project access, Mitigation Measure 4 is proposed to improve the operation on Graham Street from Glenstone to Warner Avenue by restriping the roadway within existing pavement widths. The restriping would preserve 7' bikelanes and incorporate a 14' two-way left turning median along this span. In front of the project south to Glenstone, one 12' travel lane in each direction can be accommodated. From the "A" Street north to Warner, one 18' travel lane in each direction can be accommodated. The two-way left turn median will allow left turning vehicles at all access points along Graham to take refuge while waiting for appropriate gaps in the traffic stream. The median also allows vehicles exiting the side streets a safety zone and an acceleration lane. By maintaining the median all the way to Warner Avenue, other side street accesses can benefit from this safety improvement. Thus, implementation of Mitigation Measures 2-4 reduce the potential site access and pedestrian/bicycle hazards to a level less than significant.

Accident Data

As required in the City of Huntington Beach's Traffic Impact Analyses Guidelines, a review of accident history in the project area was performed by Darnell and Associates, Inc. Over a 2-1/2 year period, traffic collisions on the 1/2 mile segment of Graham Street from Warner to Slater resulted in one (1) incident with no report of injury. This rate calculates to 0.25 collisions per one million vehicle miles (mvm) traveled. It should be noted that this one accident was vehicle/fixed object and the cause was attributable to driving under the influence. According to the Countywide averages for accident history for Orange County on two lane roadways, the average is 1.5 accidents/mvm. Based on the proposed project and recommended safety mitigation to include a traffic signal and roadway modifications (Mitigation Measures 2 and 4), the introduction of the proposed project is not expected to raise the incident rate on Graham Street.

Accidents at involved intersections on Graham Street over the same 2-1/2 year period are summarized as follows:

- Graham/Pendleton - One vehicle/vehicle collision; no injury
- Graham/Glenstone - One vehicle/bicycle collision; injury
- Graham/Slater - One vehicle/fixed object collision; no injury
- Graham/Warner - Nine incidents with nine reported injuries

The incident rate on Graham Street near the project ~~are~~ ***is*** insignificant. A higher incident rate occurs at the intersection of Graham/Warner with approximately 3.6 collisions occurring each year. Although higher traffic density does not necessarily correlate to increased accident rates, the proposed project's contribution of traffic at this intersection is 3.75% of the short term total. In an effort to quantify this added demand in terms of accident potential, a calculation was performed that equates to an increase 0.135 incidents per year (3.6 + 3.75% = 3.735) or one accident every 7.4 years. According to Darnell and Associates, Inc., this potential is not considered significant.

Parking

Implementation of the proposed project will create an additional demand for parking. The project also proposes to increase the on-site supply of parking. The project will provide parking for the proposed development consistent with the Huntington Beach Zoning and Subdivision Ordinance (ZSO) requirements of: two (2) covered spaces and two (2) open spaces per unit for up to four (4) bedrooms and three (3) covered spaces and three (3) open spaces per unit for ~~up to~~ five (5) ***or more*** bedrooms. ***A parking plan consistent with these requirements has been approved by the Department of Public Works.*** ~~Additionally, the ZSO Chapter 231, required guest parking spaces for 208 residential units is 104 spaces and the proposed site plan accommodates a total of approximately 170 spaces. Since the proposed on-street supply exceeds the required demand by 66 spaces,~~ ***No impacts are anticipated.***

No formal parking requirements exist for neighborhood parks based upon the close (walking) distance of the intended park users. According to ***Darnell & Associates and*** Paul Cook & Associates, approximately 80% of the park users will walk to the site. The remaining 20% will utilize the on-street parking within the project. ***The parking plan approved by the Department of Public Works accommodates parking demand generated by the neighborhood park;*** ~~the project is providing an excess of 66 (approximately 170 total spaces) on-street spaces,~~ no parking impacts are anticipated.

CUMULATIVE IMPACTS

The proposed project in conjunction with other past, present, and reasonably foreseeable future projects will impact existing and future roadways and intersections. To assess the significance of these impacts project traffic was combined with existing traffic and traffic from other surrounding developments and evaluated related to previous stated criteria. The significance of these cumulative impacts is discussed below.